

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 23 MAY 2006

WIPO PCT

Applicant's or agent's file reference 14031/KC/sa	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/AU2005/000357	International filing date (<i>day/month/year</i>) 16 March 2005	Priority date (<i>day/month/year</i>) 16 March 2004	
International Patent Classification (IPC) or national classification and IPC			
Int. Cl. F16B 19/02 (2006.01) F16B 21/00 (2006.01)		F16B 41/00 (2006.01) G08C 15/00 (2006.01)	G08C 17/00 (2006.01)
Applicant TELEZYGOGY INC et al			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 9 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input checked="" type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand 14 October 2005	Date of completion of this report 11 May 2006
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer JEFFREY CARL Telephone No. (02) 6283 2543

Box No. I Basis of the report1. With regard to the **language**, this report is based on:☒ The international application in the language in which it was filed☐ A translation of the international application into _____, which is the language of a translation furnished for the purposes of:☐ international search (under Rules 12.3(a) and 23.1 (b))☐ publication of the international application (under Rule 12.4(a))☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:☐ the international application as originally filed/furnished☒ the description:

pages as originally filed/furnished

pages* **1-4** received by this Authority on **24 April 2006** with the letter of **24 April 2006**

pages* received by this Authority on with the letter of

☒ the claims:

pages as originally filed/furnished

pages* as amended (together with any statement) under Article 19

pages* **5-6** received by this Authority on **24 April 2006** with the letter of **24 April 2006**

pages* received by this Authority on with the letter of

☒ the drawings:

pages as originally filed/furnished

pages* **1/3-3/3** received by this Authority on **24 April 2006** with the letter of **24 April 2006**

pages* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.3. ☒ The amendments have resulted in the cancellation of:☐ the description, pages☐ the claims, Nos.☒ the drawings, sheet **1 as originally filed**☐ the sequence listing (*specify*):☐ any table(s) related to the sequence listing (*specify*):4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).☐ the description, pages☐ the claims, Nos.☐ the drawings, sheets/figs☐ the sequence listing (*specify*):☐ any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-14	YES
	Claims	NO
Inventive step (IS)	Claims 1-14	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-14	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

- | | |
|----------------------|---------------------|
| (i) WO 2004/010011 | (iv) WO 2001/069547 |
| (ii) WO 2004/001235 | (v) WO 1999/047819 |
| (iii) WO 2002/007971 | |

Novelty (N) and Inventive Step (IS) Claims 1-14

The amended claims are directed to a fastening system including two or more fasteners which are locked or unlocked upon receipt of a suitable signal, the fastening system being characterised by including a single carrier having a plurality of faces and a plurality of fasteners, with at least one fastener being located on one face of the carrier and another fastener being located on another of the faces of the carrier.

No individual document, nor obvious combination of documents, discloses a fastening system have all of these features.

The closest art of document (i) discloses in Figure 12 a fastening system including two or more fasteners which are locked or unlocked upon receipt of a suitable signal, the fastening system being characterised by including a single carrier having a plurality of faces and a plurality of fasteners. However, all of the fasteners are located on one face of the carrier rather than being located on at least two different faces of the carrier as is defined in the claims.

(See also Box No. VI)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2005/000357

Box No. VI **Certain documents cited**

1. Certain published documents (Rule 70.10)

<u>Application No. Patent No.</u>	<u>Publication date (day/month/year)</u>	<u>Filing date (day/month/year)</u>	<u>Priority date (valid claim) (day/month/year)</u>
P, A WO 2004/101216 A	25 November 2004	13 May 2004	13 May 2003
P, A WO 2004/085860 A	7 October 2004	24 March 2004	24 March 2003
P, A WO 2004/082444 A	30 September 2004	17 March 2004	17 March 2003
P, A WO 2004/046568 A	3 June 2004	19 November 2003	19 November 2002

See also Box No. V.2

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosureDate of non-written disclosure
(day/month/year)Date of written disclosure
referring to non-written disclosure
(day/month/year)

SIGNAL ACTIVATED FASTENER ARRAY

Technical Field

This invention relates to fasteners and in particular to signal activated fastener arrays.

Background Art

- There have been disclosed in earlier patent specifications various types of fasteners, which may be actuated remotely (by radio frequency, infrared, etc.) or by hard wiring. The invention refers to any suitable prior art fastener. Some non-limiting examples are the fasteners disclosed in the following patent specifications,
- 10 the contents of which are hereby imported herein by reference: Fixing and Release Systems: International Patent Application No. PCT/AU/99/00185, Improvements in Fixing and Release Systems: International Patent Application No. PCT/U/03/00759, Improvements in Assembly: International Patent Application No. PCT/AU/03/00933, Bolt Assembly: International Patent Application No.
- 15 PCT/AU/03/01539, Fastener for Airbags and Other Uses: International Patent Application No. PCT/AU2004/000371, Fasteners: International Patent Application No. PCT/AU2004/001580.

Disclosure of the Invention

- 20 The invention provides a fastening system which includes two or more fasteners, each fastener adapted to be locked or unlocked upon receipt of a suitable signal, wherein the two or more fasteners are included in a single carrier having a plurality of faces, one of the fasteners being located on one of the faces and another of the fasteners being located on another of the faces.

The invention is based on the concept that many of the fasteners referred to above and in the specifications incorporated herein by reference can be provided in groups of fasteners. The fasteners may be arranged on two faces or on three or more faces.

- 5 The fasteners in each carrier may be identical or they may differ one from another. When more than one fastener is arranged on a single face, they may adopt any desirable pattern. There may be one or more fasteners on various faces.

The fasteners may be adapted to be locked or unlocked upon receipt of the same signal, or different signals. For example, one fastener may be adapted to unlock
10 upon receipt of a magnetic signal, whereas a neighbouring fastener in the carrier may be adapted to be unlocked upon receipt of an infrared signal.

The fasteners may be locked or unlocked upon receipt of the same type of signal, such as an electric signal, but the fasteners may be addressable individually as already disclosed in one or more of the specifications referred to above.

- 15 Preferably, all fasteners in a single carrier are connected to a single command source or there is a common electronic arrangement hosting all the fasteners. This can provide optimum efficiency and minimum cost in relation to groups of fasteners.

If desired, the fasteners in question may be the type where locking occurs without
20 the need for activation of the fastener - for example, the type of fastener illustrated in Figures 5 to 7 of International Patent Application No. PCT/AU2004/001580. This type of fastener can greatly facilitate attachment of objects or parts to be fastened, yet provide the required security since release or unlocking is dependent on the receipt of a suitable signal.

- 25 As one example of application of the invention, the fastening system can be used to great effect in aircraft interiors where seats, shrouds, interior lining, etc., require a

large number of fasteners. Using the fastening system of the invention can enable rapid exchange or replacement of these parts.

Brief Description of the Drawings

The invention will now be described in relation to certain non-limiting examples
5 thereof described in connection with the accompanying drawings, in which:

Figure 1 is a perspective view of a first embodiment of the invention;

Figure 2 is a perspective view of a second embodiment of the invention;
and

Figure 3 is a perspective view of a third embodiment of the invention.

10 Detailed Description of the Drawings

In relation to Figure 1, fastening system 20 has fasteners on two faces, 24 and 26. Face 24 has three fasteners, two type-12 fasteners and one type-14 fastener, in a single row. Opposite face 26 of carrier 22 has an identical three fasteners.

In Figure 2, fastening system 30 has four type-12 fasteners arranged at the corners
15 of a square on face 32. Not shown are fasteners on the face opposite to face 32. In a modified embodiment, carrier 28 could carry one or more fasteners on, for example, faces 34 or 36. Fasteners on face 32 lie in one plane, while one or more fasteners on face 34, for example, would lie in a perpendicular plane to that on face 32.

20 With reference to Figure 3, fastening system 40 has three type-12 fasteners on carrier 38. One fastener 12 is on face 42, another fastener 12 is on face 44 and a third fastener 12 is on face 46. This illustrates an embodiment of the invention where the fasteners are in three planes, on three faces.

As will be readily appreciated, the types of fasteners in the embodiments in Figures 1 to 3 may be readily mixed.

Industrial Applicability

The invention is useful in providing a carrier for a number of fasteners. It can
5 assist in rapid fastening or unfastening in assemblies which require a large number of fasteners.

Claims

1. A fastening system which includes two or more fasteners, each fastener adapted to be locked or unlocked upon receipt of a suitable signal, wherein the two or more fasteners are included in a single carrier having a plurality of faces, one of
5 the fasteners being located on one of the faces and another of the fasteners being located on another of the faces.
2. The fastening system of Claim 1, in which all fasteners are identical.
3. The fastening system of Claim 1, which contains at least two different types of fasteners.
- 10 4. The fastening system of any one of Claims 1 to 3, wherein there are more than two fasteners.
5. The fastening system of Claim 4, wherein the fasteners are located on three faces.
6. The fastening system of Claim 5, wherein there is one fastener located on each
15 face.
7. The fastening system of Claim 5, wherein there is more than one fastener located on each face.
8. The fastening system of Claim 5, wherein there is a mixture of faces having one fastener and more than one fastener.
- 20 9. The fastening system of any one of Claims 1 to 8, wherein each fastener is adapted to be locked or unlocked upon receipt of a signal of a first type.
10. The fastening system as claimed in any one of Claims 1 to 8, wherein at least one fastener is adapted to be locked or unlocked upon receipt of a signal of a

first type and at least another fastener is adapted to be locked or unlocked upon receipt of a signal of a second type.

11. The fastening system as claimed in Claim 9 or 10, wherein the signal of the first type and the signal of the second type is chosen from a group comprising a magnetic signal, an infrared signal and an electric signal.
12. The fastening system of any one of Claims 1 to 11, wherein each fastener has an individual address.
13. The fastening system of any one of Claims 1 to 12, wherein all fasteners are connected to a single command source for the suitable signal.
14. A fastening system substantially as herein described with reference to any one of the accompanying drawings.

1/3

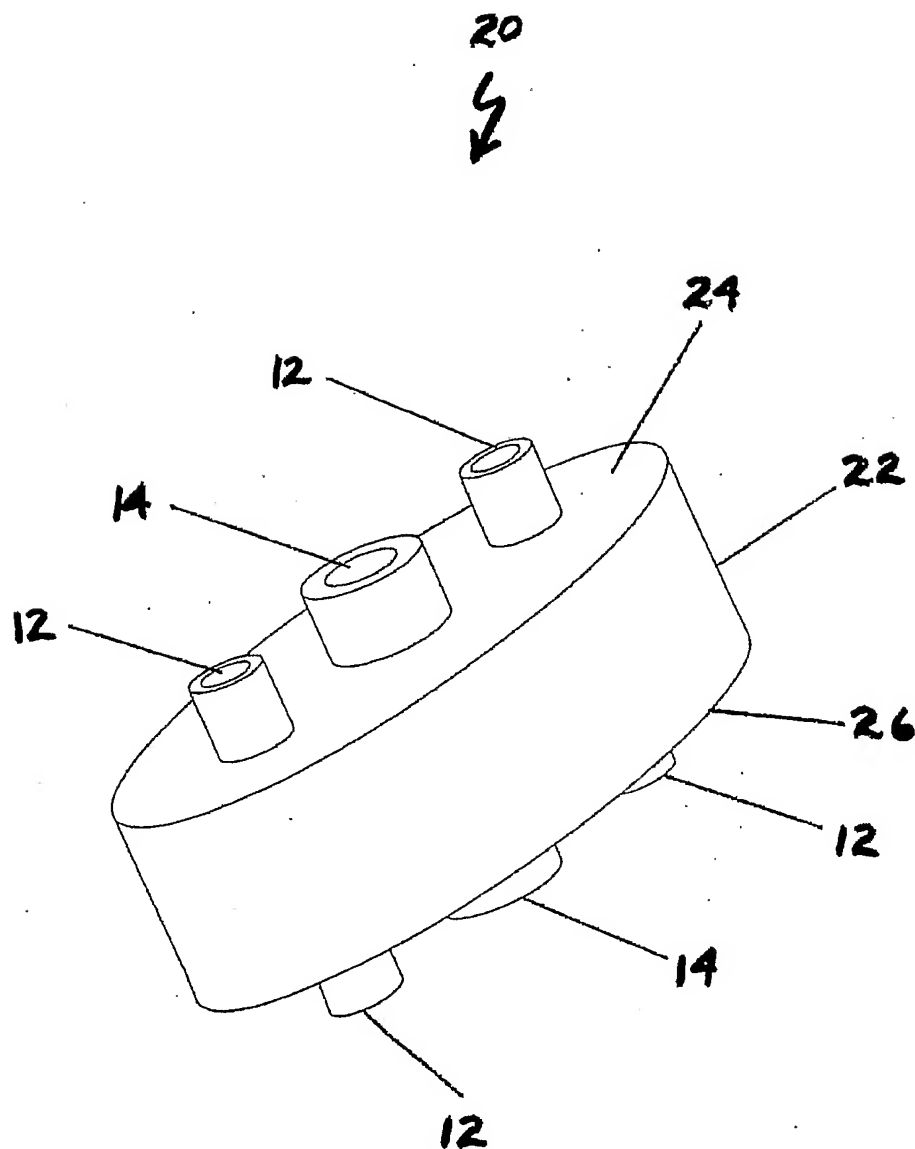


FIGURE 1

2/3

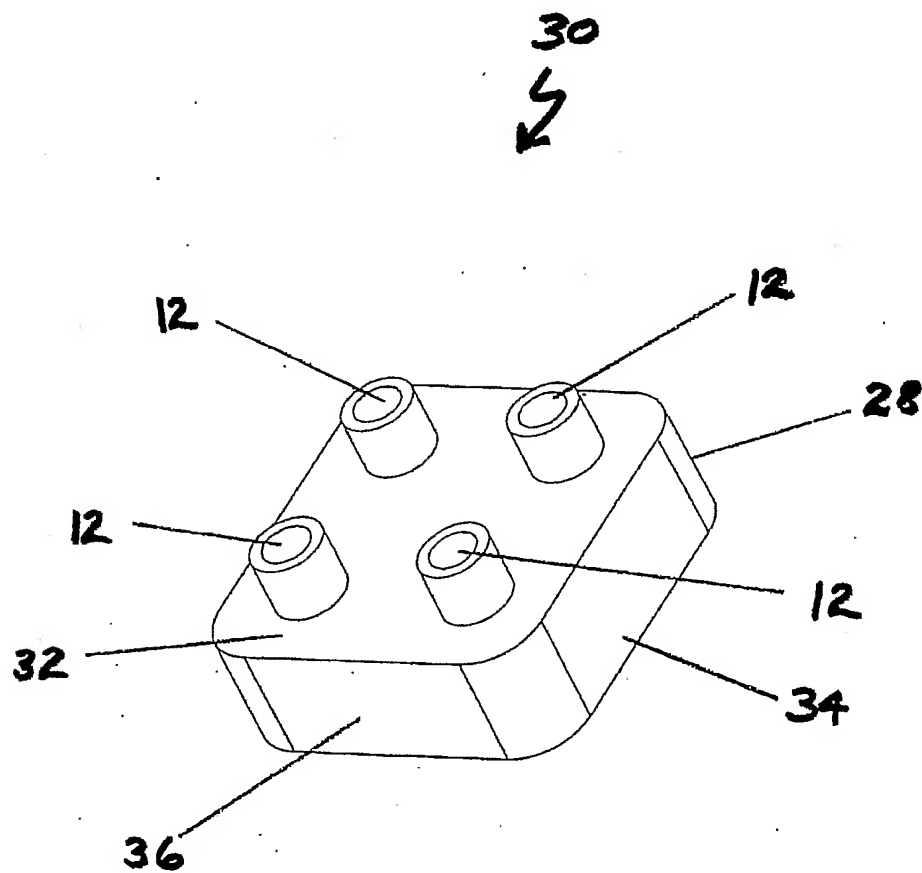


FIGURE 2

3/3

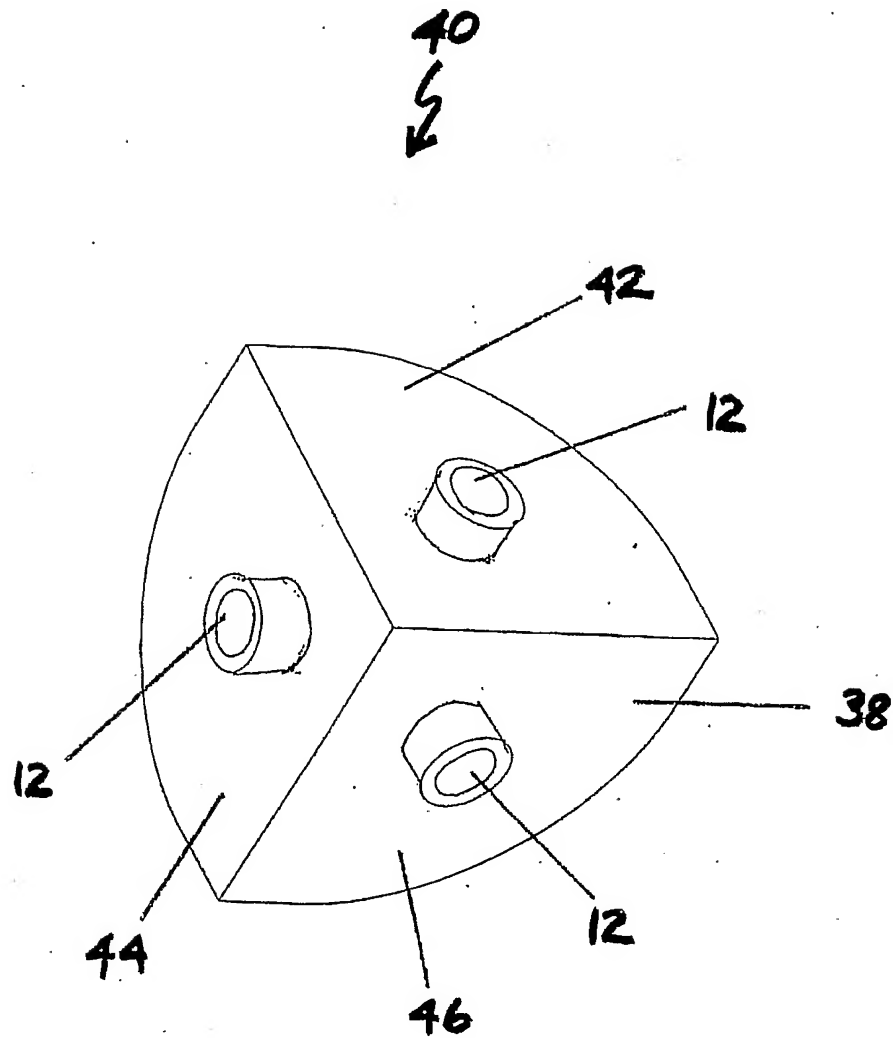


FIGURE 3